AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A communication apparatus performing ~~periodical~~ periodic communications with another communication apparatus via a transmission line, comprising:

a communication control portion operable to set a communication period to ~~(L×m/n)~~ L×m/n to perform communications, wherein ~~(L~~ L is a variation cycle of characteristics of a transmission line, n is an integer that is 2 or larger, and m is an integer that is greater than or equal to n ~~or larger~~ and whose greatest common measure with n is 1) ~~to perform communications,~~

a transmission line estimation portion operable to estimate the characteristics of the transmission line within a time ~~(L/n)~~ L/n after a certain offset time has passed since the communication period started, and

a communication parameter determination portion operable to determine a communication parameter to be used by the communication control portion, based on a result of estimation by the transmission line estimation portion.

2. (Currently Amended) The communication apparatus according to claim 1,

wherein the offset time is ~~(L×k/n)~~ L×k/n, and ~~(k~~ k is a real number that satisfies ~~0≤k<m)~~ 0≤k<m.

3. (Original) The communication apparatus according to claim 1,

wherein the transmission line estimation portion estimates the characteristics of the transmission line at least n times.

4. (Currently Amended) The communication apparatus according to claim 1,

wherein the transmission line estimation portion estimates the characteristics of the transmission line ~~are estimated~~ at an initial starting up of the communication apparatus or upon ~~detecting~~ a detection of a change in a state of the transmission line.

5. (Original) The communication apparatus according to claim 1,

wherein the communication period is a period of beacons sent from a communication apparatus serving as a master unit.

6. (Currently Amended) The communication apparatus according to claim 5,

wherein the communication control portion is operable to send a request to allocate a time for estimating the characteristics of the transmission line is sent to the communication apparatus serving as the master unit.

7. (Currently Amended) The communication apparatus according to claim 6,

wherein the communication control portion is operable to notify another communication apparatus of an allocation of a time for estimating the characteristics of the transmission line is notified using a beacon frame or a polling frame to another communication apparatus, and the transmission line estimation portion is operable to estimate the characteristics of the transmission line are estimated only when permission is given.

8. (Original) The communication apparatus according to claim 1,

wherein the variation cycle L of the characteristics of the transmission line is a half cycle of a commercial power supply cycle.

9. (Currently Amended) A transmission line estimation method executed by a communication apparatus performing periodical periodic communications with another communication apparatus via a transmission line, comprising:

setting a communication period to (L×m/n) L×m/n to perform communications, wherein (L L is a variation cycle of characteristics of a transmission line, n is an integer that is 2 or larger, and m is an integer that is greater than or equal to n or larger and whose greatest common measure with n is 1) 1 to perform communications,

estimating the characteristics of the transmission line within a time (L/n) L/n after a certain offset time has passed since the communication period started, and

3

determining a communication parameter to be used in the communicationscommunicating step, based on a result of said estimation in the estimating step.

10. (Currently Amended) An integrated circuit used for a communication apparatus performing periodical periodic communications with another communication apparatus via a transmission line,

wherein circuits are integrated that function as:

a communication control portion operable to set a communication period to (L×m/n) L×m/n to perform communications, wherein (L L is a variation cycle of characteristics of a transmission line, n is an integer that is 2 or larger, and m is an integer that is greater than or equal to n or larger and whose greatest common measure with n is 1) to perform communications,

a transmission line estimation portion operable to estimate the characteristics of the transmission line within a time (L/n) L/n after a certain offset time has passed since the communication period started, and

a communication parameter determination portion operable to determine a communication parameter to be used by the communication control portion, based on a result of estimation by the transmission line estimation portion.

4